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May 10, 2010

VIA EMAIL AND EXPRESS OVERNIGHT MAIL

Sabrina Argentieri, Esquire
Associate Regional Counsel, C-14J
U.S. Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604

RE: United States Steel Corporation – Great Lakes Works
Notice and Finding of Violation

Dear Ms. Argentieri:

Pursuant to our telephone conversations on March 8, 2010 and April 16, 2010, and our meeting on January 5, 2010, United States Steel Corporation (U. S. Steel) is responding to the Notice and Finding of Violations (NOV) issued to U. S. Steel Great Lakes Works, dated September 30, 2009. As you know, U. S. Steel and the United States Environmental Protection Agency (USEPA) decided that it would be best to consolidate a meeting on this issue along with issues requiring resolution regarding U. S. Steel's Gary Works and Granite City Works. Therefore, a consolidated meeting was held on January 5, 2010 in Merrillville, Indiana at Indiana Department of Environmental Management (IDEM) offices to discuss resolution of this and other matters. During that meeting U. S. Steel discussed USEPA's allegations. U. S. Steel agreed to provide follow-up written responses to the notices. To facilitate an easier review of our responses, we have provided the numbered paragraph from the NOV along with the corresponding allegation as provided in the NOV, followed by our response. While U. S. Steel respectfully disagrees with many of the allegations raised in the NOV, U. S. Steel appreciates this opportunity to provide this response and would be pleased to address any questions that USEPA may have after it reviews the response.

RESPONSES TO ALLEGATIONS PROVIDED IN FINDING OF VIOLATION/NOTICE OF VIOLATION

PARAGRAPH NO. 14
USEPA ALLEGATION:

On August 26, 2008, EPA observed several casthouse runner covers not in place without active work in progress, and particulate exiting the casthouse roof monitor. Failure to maintain runner covers and operate the baghouse control system in a satisfactory manner at all times during blast furnace operation is a violation of Title V Permit Condition E-0-U2-14.V.1.

U.S. STEEL RESPONSE:

U. S. Steel maintains the runners on a regular basis as necessary to change slag pits. The covers must be removed to change pits and to ensure that flow of slag is not impeded. In addition, the runner covers are removed, as necessary, to ensure that slag is kept moving, sometimes with the assistance of mechanical equipment that cannot be utilized with the runners covers in place. This is necessary to prevent the slag from "freezing" in place. If the flow of molten slag is impeded by dried slag or by other means, this could result in molten slag overflowing onto the cast floor creating an unacceptable dangerous condition. On August 26, 2008, during USEPA's observations, the runner covers were removed for maintenance. Specifically, the runner covers were removed to allow U. S. Steel to remove dried slag from the runner path to allow the proper flow of molten slag.

U. S. Steel has reviewed its procedures and has since modified its trough and runner maintenance procedures to specifically require operators to ensure that the runner covers are put back into place after maintenance and when such placement can be done safely. U. S. Steel notes that it cannot safely replace the runner covers immediately after maintenance for safety reasons. During repairs, the trough/runner system becomes cold. When returning to operations, the trough/runner system is cold and the slag and iron are as well. These factors combined with cold runner covers promote solidification of the iron and slag before they get to either the slag pit or railroad torpedo car. At that point, the molten material (still coming from the furnace) overflows the trough runners creating a significant safety issue. Therefore, the trough and runner maintenance procedures require that the runner covers be replaced once normal iron temperatures are achieved. While USEPA does not define "active work," U. S. Steel notes that the runner covers may not be in place even when it appears that no "active work" is being conducted, since safety considerations require that the runner covers not be replaced until the iron reaches normal temperatures.

U. S. Steel also respectfully disagrees with USEPA's assertion that U. S. Steel failed to maintain runner covers. To the contrary, for safety and environmental reasons, U. S. Steel was indeed maintaining the runners and runner covers. U. S. Steel also specifically disagrees with USEPA's assertion that a violation of permit conditions E-01.12-14.V.1occurred. These permit conditions (for each furnace) specifically require that, "[t]he permittee shall not operate EU-"A,[B, D]" BLAST unless the *baghouse control system* is installed, maintained, and operated in a satisfactory manner. (R336.1301), (R336.1331). There is no requirement that the slag runner covers be in place continuously, nor are the slag runner covers considered part of the "baghouse control system." Therefore, the removal of these runner covers for maintenance is not a violation of the above-referenced conditions. Finally, U. S. Steel questions USEPA's assertion that it [USEPA] observed particulate exiting the casthouse roof monitor when the runner covers were not in place. USEPA offers no data, e.g., VEOs, to support this allegation nor does it show that even if particulates were exiting the roof monitor that such emissions were attributable to the fact that the runner covers were not in place at the time. U. S. Steel notes that while it is standard practice to operate with the runner covers in place, consistent with the safety constraints identified above, no deviation and certainly no violation occurs while the runner covers are removed for maintenance purposes, if the casthouse roof monitor and casthouse baghouse emissions standards, e.g., opacity standards, are being maintained. In sum, U. S. Steel respectfully disagrees that any

violation of permit conditions E-01.12-14.V.1 occurred on August 26, 2008, as alleged by USEPA. However, U. S. Steel does recognize that its maintenance procedure could have been improved and as a result, it revised and updated its procedures to address USEPA's concerns.

While the slag runner covers are arguably part of the capture system, they are not part of the baghouse control system to which the above-referenced permit conditions apply. Thus, there is no specific requirement in the Great Lakes Works' Renewable Operating Permit to operate the casthouse with slag runner covers continuously in place.

PARAGRAPH NO. 15
USEPA ALLEGATION:

U.S. Steel self-reported in its Quarterly Deviation and Compliance Monitoring Reports and in its Environmental Incident Reports the following exceedances at its blast furnace casthouses:

> Visible emissions exceeding twenty percent (20%) opacity on a six-minute average from blast furnace casthouse roof monitors and ten percent (10%) opacity on a six-minute average from casthouse baghouse stacks are violations of R 336,1358 and R336.1201(3) of the Michigan SIP, Title V Permit Conditions E-012-14.II.B and F-01.05.II.B, and 40 C.F.R Part 63, Subpart FFFFF.

Emission Unit	Date	Time	Average Opacity (%)
B2 Blast Furnace Casthouse Roof	2/6/2006	09:30-09:35	30
B2 Blast Furnace Casthouse *Stack (sic)*	10/20/2006	09:38-09:44	13
B2 Blast Furnace Casthouse *Stack (sic)*	10/20/2006	09:44-09:50	15
B2 Blast Furnace Casthouse *Stack (sic)*	10/20/2006	0950-09:56	11
B2 Blast Furnace Casthouse *Stack (sic)*	10/20/2006	10:48-10:54	12

U. S. Steel note: Opacities provided above are six minute averages.

U.S. STEEL RESPONSE:

The occurrence of the 30% 6-minute opacity from the B2 Blast Furnace Casthouse Roof on February 6, 2006, was the result of an isolated, non-systemic deviation. U. S. Steel was in the process of shutting down the furnace to repair a burnt tuyere. During the process, U. S. Steel incurred problems with closing the tap hole which led to excessive emissions. Based upon U. S. Steel's review, the incident was an isolated, non-systemic event attributable to the unusual difficulty in closing the tap hole.

As we discussed during our meeting, USEPA misinterpreted the VEO datasheets from October 20, 2006. While the VEO observer noted that "stack test" on the VEO form, this notation was used to designate that the observation of the *roof monitor* was occurring during the casthouse baghouse stack test and was not intended to indicate that the observation was taken

from casthouse baghouse stack. Pursuant to Permit Conditions E-01.12-14.II.B and F.01.05.II.B, and 40 C.F.R Part 63, Subpart FFFFF. (40 CFR § 63.7790(a)), visible emissions from roof monitors have maximum opacity limit of 20% 6-minute average. The observations recorded on October 20, 2006 and provided to USEPA were taken from the casthouse roof monitor and therefore are below the applicable opacity limitation. Great Lakes Works and Veolia Water have since instructed the Observer to make a notation that "roof monitor VEOs" are being observed in the facility section and "Stack testing" will be in the comments section. Only the description of the Source being observed will be identified in the Facility section of the form. By way of further response, U. S. Steel refers USEPA to the attachment provided under Tab 15, in which the certified VEO reader provides a clarification statement. In sum, U. S. Steel responds that no violation of R 336.1358 and R336.1201(3) of the Michigan SIP, Title V Permit Conditions E-012-14.II.B and F-01.05.II.B, and 40 C.F.R Part 63, Subpart FFFFF occurred on October 20, 2006.

PARAGRAPH NO. 16
USEPA ALLEGATION:

On August 26,2008, from 12:20-12:23, EPA observed visible emissions of 11% on a three-minute average from slag skimming exiting the BOP Shop roof monitor.

Time	(M)	0	15	30	45
12:20-12:21	0	0	0	0	15
12:21-12:22	1	45	15	15	25
12:22-12:23	2	15	5	0	0

Visible emissions exceeding ten percent (10%) opacity on a three-minute average from slag skimming exiting the BOP Shop roof monitor are violations of R 336.1201(3) of the Michigan SIP and Title V Permit Condition E-01.16.II.B.3.

U.S. STEEL RESPONSE:

The applicability of Title V Permit Condition E-01.16.II.B.3. is limited to visible emissions from *slag skimming operations*. As we discussed during our meeting in Merrillville, other operations in addition to slag skimming contributed to BOP Shop roof monitor emissions during the time period on August 26, 2008 to which USEPA referenced. We reviewed our operational records and have determined that an Oxygen Blow was occurring on Vessel No. 25 during this time period. While U. S. Steel agrees that the 10% 3-minute average opacity limit applies to *slag skimming operations only* as referenced above, it does not apply to other operations conducted within the BOP Shop. Other operations within the BOP Shop, such as the oxygen blow, are subject to a 20% 3-minute average opacity standard at the roof monitor. See, e.g., Conditions E-01.18 II.B.2 and F-01.17 II.B.3, and the Iron and Steel MACT, which require the BOP Shop roof monitor to obtain a 20% 3-minute average standard when these operations are occurring. Furthermore, U. S. Steel is not required to limit its operations within the BOP Shop to one operation, e.g., hot metal transfer, desulfurization, slag skimming, or oxygen blow. Such a limitation would contrary to law and would be unnecessarily restrictive. In fact, it is very common for more than one operation to occur within the BOP Shop at any given time. U. S. Steel has evidence that the opacity of the roof monitor during multiple operations including slag

skimming has been below 10%. For this reason, U. S. Steel respectfully disagrees with USEPA's assertion that violations of R 336.1201(3) of the Michigan SIP and Title V Permit Condition E-01.16.II.B.3 occurred on August 26, 2008.

PARAGRAPH NO. 17
USEPA ALLEGATION:

From 2006 through 2008, U.S. Steel self-reported in its Quarterly Deviation and Compliance Monitoring Reports and Environmental Incident Reports seventy three (73) exceedances at its BOP Shop roof monitors. Data are included as Attachment A. Visible emissions exceeding twenty percent (20%) opacity on a three-minute average from the BOP Shop roof monitors are violations of R 336,1364(2) of the Michigan SIP, Title V Permit Condition E-01.18.II.B.2, and 40 C.F.R Part 63, Subpart FFFFF.

U.S. STEEL RESPONSE:

U. S. Steel notes that 66 of the above-referenced 73 alleged exceedances were the subject of Consent Order in which the Michigan DEQ prosecuted the compliance issues related to the BOP Shop. These 66 alleged violations were to have occurred prior to May 22, 2006. A copy of the Order is provided behind Tab 17. As noted in the Order, U. S. Steel was obligated to, *inter alia*, pay a civil penalty, complete an engineering study, and submit a compliance schedule in which improvements to the BOPF Shop could be made so that Great Lakes Works could *achieve compliance by May 22, 2006*. The compliance schedule to which MDEQ [MDNRE] agreed is also provided behind Tab 17.

Per paragraph 10 of the Order, U. S. Steel was required to achieve compliance with the relevant air regulations in accordance with the requirements of the Order. Specifically, paragraph 3(e) of the Order states, "[b]y May 22, 2006, visible emissions from the No. 2 Basic Oxygen Furnace Process Shop shall not exceed 20 percent opacity...." This statement makes it clear that U. S. Steel would have opacity exceeding 20% prior to May 22, 2006, and prior to the engineering changes done pursuant to the Order. Such excursions would be anticipated. The civil penalty assessed took into consideration the schedule and time it would take for U. S. Steel to achieve compliance and attain that standard. Paragraphs 3(a)-(e) establish the schedule of compliance and tasks needed to achieve compliance.

Paragraph 13 of the Order states, "This Consent Order in no way affects the Company's responsibility to comply with any *other* [emphasis added] applicable state and federal, or local laws or regulations...." The use of the word "other" in this paragraph clarifies that compliance with the applicable regulations as specified in the consent order from the sources identified in the consent order would be intermittent and that engineering changes and construction would be required to achieve compliance. This is the reason why MDEQ and U. S. Steel agreed to the schedule provided by U. S. Steel as part of the settlement.

U. S. Steel also questions U. S. EPA's overfiling of the matter, especially at this stage, notably, as U. S. Steel and MDEQ [MDNRE] agreed to a Compliance Schedule five years ago and because U. S. Steel followed the terms of the Consent Order. Even if USEPA were able to prosecute for the exceedances occurring prior to May 22, 2006, such enforcement would be inappropriate and unjustified in this circumstance since U. S. Steel would be unreasonably prejudiced by such action. U. S. Steel relied on the terms, as well as the spirit and intent, of the Consent Order that was used to resolve the BOP compliance issues, including the roof monitor opacity.

In sum, U. S. Steel respectfully responds that USEPA enforcement of the above-

referenced alleged violations is not appropriate in light of the previously executed Order with MDEQ; the civil penalty that was assessed and satisfied; U. S. Steel's compliance with the Order; U. S. Steel's investment of significant capital at the BOP Shop; and U. S. Steel's marked improvements at the BOP Shop.

By way of further response, U. S. Steel notes that it has completed the following improvement projects at the BOP since it acquired the assets from National Steel:

COM Upgrade

- Replaced COM with a new PS-1 revision 2 compliant instrument and relocate to the ESP stack.
- Platforms and ladders were inspected and repaired to assure safe access.
- Installed software/hardware to interface with existing Process Control and PI systems.

ESP Rehabilitation

- Performed internal rehab of 3 unit, 6 lane, 4 chamber ESP.
- Replaced 12 existing rectifier transformers with 24 new RTs.
- Replaced existing rappers with new rigidtrode rappers.
- Replaced existing RT and Rapper electric panels with new panels.
- Replaced ESP end walls.
- Replaced ESP internals including new plates, rigid electrodes, frames, & associated equipment.
- Performed repairs to the internal structure and surrounding ducts and plenums.
- Installed new packaged control room for start-up purposes.

BOP SLAG CONDITIONING AND TAPPING EMISSION CONTROLS

- Expand No. 1 baghouse capacity to treat the slag-conditioning fumes.
- Increase existing baghouse capacity to 600,000 ACFM
- Enable 95 – 100% capture of the tapping and slag-conditioning emissions.
- Installed two additional modules
- Installed additional ductwork, required to connect existing charging system to new slag-conditioning hoods

BOP NO. 2 Baghouse System Improvements

- Baghouse capacity was increased to 290,000 ACFM.
- Installed four additional baghouse modules
- Installed new fans and motors.
- Modified capture hoods to increase efficiency and replace duct work as required.
- Installed baghouse leak detection and data collection to comply with MACT standards.
- Performed for hood modifications to accommodate the auxiliary hot metal transfer.

U. S. Steel recognizes that seven of the alleged exceedances occurred after the compliance deadline of May 22, 2006; and may be considered distinguishable - separate

and distinct issues - from those occurring prior to May 22, 2006. A summary of the results of U. S. Steel's investigations and corrective actions regarding these seven incidents is provided below:

June 23, 2006 – During the oxygen blow of the affected heat, slopping (slag and/or molten steel flows over the lip of the vessel) occurred. While the incident was short in duration, Great Lakes Works was able to minimize emissions by quickly responding by reducing the oxygen blow rate per its Standard Operating Procedures; and lowered the lance. In addition, subsequent corrective actions include monitoring bottom thickness and retraining, to ensure the working volume of the vessel is sufficient to minimize the potential for slopping.

September 11, 2006 –During the blow of a heat, Great Lakes Works observed an electrical failure which caused failure of the steam sprays which suppress or contain emissions from the oxygen lance hole in the BOP vessel. The steam ring around the oxygen lance hole on the furnace was an improvement implemented by U. S. Steel. The purpose of the steam ring is to keep the emissions from escaping around the oxygen lance hold and have those emissions contained to the ESP system for capture and control. Upon investigation, Great Lakes Works discovered blown fuses and the coil on the steam actuator was shorted. Great Lakes replaced the fuses and coil.

November 16, 2006 - This incident was caused from slopping as a result of high silicon. Great Lakes Works reduced the oxygen blow rate and revising the lance height accordingly.

November 17, 2006 – This incident was caused from slopping as a result of high silicon. Great Lakes Works reduced the blow rate; and added fluxes to minimize emissions.

October 27, 2007 – On October 27, 2007, approximately 08:34 a.m. the BOP roof monitor had one 3-minute opacity reading of 22.08%, exceeding the permit limit of 20%. Upon investigation, it was determined that GLW was finished with the tap on heat #25-3471 and slag conditioner was added to the top of the ladle. As the slag conditioner was reacting, the fugitive emission escaped the ladle and was emitted through the BOP Roof Monitor. Number 25 Vessel had use of the primary system (ESP) and Number 26 Vessel had use of the secondary system (No. 1 Baghouse) because they were finishing the charge of hot metal. When the vessel operator called for the primary system, there was a lag time when both primaries were open, which caused a reduction in draft (due to one set of louvers opening (#26 vessel) and another set closing (#25 vessel)).

Because the exceedance occurred during the beginning of the reading (approximately 08:34 a.m.) the following 82 minutes (08:34-09:57) of observations demonstrated that GLW was in compliance with the opacity requirement. To prevent reoccurrence, operators have since been and are now instructed to verify the position of louvers prior to adding slag conditioner.

August 29, 2008 – This incident was caused from high silicon content which resulted in slopping at the BOP vessel. In response, Great Lakes Works reduced the oxygen blow rate and adjusted the lance height accordingly. In addition, limestone flux

was added in an effort to cool the process and slow the reaction to minimize slopping and resulting emissions.

November 5, 2008 – Due to a caster termination, Great Lakes Works had to reladle a heat that had been opened prior to the caster termination. This is not typical. (The caster terminated due to a cold heat.) Great Lakes Works believes the ladle was being dumped too quickly. The event was short in duration (which resulted in elevated emissions for approximately two to three minutes) and no immediate action could have been taken to minimize emissions from the event. To prevent the occurrence of future incidents, Great Lakes Works reviewed the incident with affected and appropriate personnel; and revised the reladling procedures to ensure that reladling occurs at a pace that minimizes emissions. After revising the reladling procedures. Great Lakes Works retrained affected and appropriate personnel on the revised relading practice.

PARAGRAPH NO. 18
USEPA ALLEGATION:

On August 25, 2008, from 14:55-15:18, EPA took visible emission readings at Blast Furnace B2 East slag pit at the facility and observed opacity of 6%, 8%, and 6%, respectively, during the following three distinct six-minute averages:

Time	(M)	0	15	30	45
14:56-14:57	1	10	10	15	10
14:57-14:58	2	5	5	0	0
14:58-14:59	3	5	0	5	5
14:59-15:00	4	5	10	5	5
15:00-15:01	5	5	5	10	10
15:01-15:02	6	5	15	5	5

Time	(M)	0	15	30	45
15:06-15:07	1	5	5	10	5
15:07-15:08	2	10	10	15	15
15:08-15:09	3	5	10	5	15
15:09-15:10	4	10	10	5	5
15:10-15:11	5	5	10	5	5
15:11-15:12	6	0	10	5	5

Time	(M)	0	15	30	45
15:12-15:13	1	5	10	30	5
15:13-15:14	2	10	5	5	5
15:14-15:15	3	0	5	5	5
15:15-15:16	4	5	10	5	5
15:16-15:17	5	5	5	5	5
15:17-15:18	6	5	0	5	5

The slag pit constitutes a storage pile. Visible emissions exceeding five percent (5%) opacity on a six-minute average from storage piles are violations of R 324.5524(2) of the Michigan SIP and Title V permit Condition B-I .II.B.

U.S. STEEL RESPONSE:

U. S. Steel respectfully disagrees with USEPA's assertion that a slag pit is a "storage pile." U. S. Steel notes that the USEPA's interpretation of "slag pits" being "storage piles" is inconsistent with how slag pits have historically been addressed on an operational basis, permitting and enforcement basis and air emissions basis.

First, operationally, slag pits are clearly distinguishable from storage piles. Please note that a slag pit is more than a "storage pile" as USEPA refers to it. Unlike "storage piles," operating the slag pit is a vital component to the iron making process. In the past, USEPA has acknowledged that slag pits are a vital part o the blast furnace operations. *See, e.g.,* http://www.epa.gov/osw/conserve/tools/cpg/pdf/rtc/chap2.pdf . The process involves pouring thin layers of molten slag directly into slag pits adjacent to the blast furnaces. A slag pit is just that – a "pit," and not a pile. Typically, when the slag pit is filled with slag, i.e., when it reaches the surface grade, it is emptied which is distinguishable from a storage pile which, by definition, protrudes noticeably above the surface level. The emissions from a slag pit are more confined, i.e, they only occur at the face of the pit, unlike piles. Filling the slag pit, quenching the slag in the pit, and removal of slag from the pit are all essentials part of the iron making process. The timing and scheduling of the filling and emptying the pits are critical components of the iron making process and schedule. Operations and processes conducted within slag pits also include hydrogen sulfide emission reduction by the addition of hydrogen peroxide, which distinguishes slag pits from storage piles. Furthermore, the slag cannot remain in the pit without hindering iron-making operations. Slag pit operations include procedures to properly quench the slag for safety and environmental reasons. In addition, the pits are maintained for better operations. Such maintenance includes lining the pit with solidified slag or "skull" to aid in molten slag removal. These types of operations and maintenance are unique to slag pits and are not used at storage piles.

Second, considering and regulated slag pits as storage piles is inconsistent with the permitting history of slag pits at Great Lakes Works as well as other jurisdictions in which U. S. Steel operates. Unlike storage piles, slag pits are generally *specifically* included in operating permits, distinguishing them from storage piles. The operation of slag pits is typically identified as part of the blast furnace operations or included as a separate process in operating permits. This is precisely how MDEQ (MDNRE) has permitted slag pits for Great Lakes Works as well as other slag pits at other iron-making facilities in Michigan. The slag pits to which UESPA references in the above-referenced allegation are specifically included and identified as processes in Great Lakes Works Title V permit. In Tables E-01.12, E-01.13, and 01.14 for A, B, and D Blast Furnaces, respectively, MDEA (MDNRE) identifies the slag pits as a "device" within the blast furnace operations. In addition, Great Lakes Works' Title V permit identifies "Slag pits for "A", "B" and "D" Blast Furnaces in Table F-01-.06. The identification and inclusion of the slag pits in these sections of the permit clearly distinguishes slag pits from storage piles. While the permit itself (in these sections or elsewhere) does not identify the opacity to which slag pits are subject with any specificity, U. S. Steel refers USEPA to the Letter of Violation (LOV) that Great Lakes Works received from MDEQ on July 19, 2007 (provided behind

Tab 18, where MDEQ alleges that B2 Blast Furnace Slag Pit at Great Lakes Works exceeded the applicable opacity limits established by Michigan Rule 336.1301(1) and General Condition No. 2(a) of Great Lakes Works Title V Permit (Operating Permit No. 199600132). General Condition No. 2(a) of Great Lakes Works Title V Permit provides:

> 2. Except as provided in subrules 2, 3, and 4 of R 336.1301, a person shall not cause or permit to be discharged into the outer
> air from *a* process or process equipment [*emphasis added*] a visible emission of a density greater than the most stringent of R 336.1301(1)(a) or (b) unless otherwise specified in this RO Permit. The grading of visible emissions shall be determined in accordance
> with R 336.1303. (R 336.1301(1) in pertinent part):
> a) A 6-minute average of 20% opacity, except for one 6-minute average per hour of not more than 27% opacity.

The distinction from storage piles provided in this LOV is significant. In this correspondence, MDEQ, consistent with past permits and permits for other slag pits within Region V and other jurisdictions in which U. S. Steel operates, confirms that slag pits are "processes;" and that in Michigan slag pits are subject to the opacity standard established by .Michigan Rule 336.1301(1), which requires the opacity from slag pits not to exceed 20% (except for one 6-minute average per hour of not more than 27%.) Please refer to the documents provided behind Tab 18 for a copy of the LOV and U. S. Steel's response to MDEQ.

U. S. Steel also refers USEPA to the Title V permit issued to Severstal North America, Permit No. 199700004, in which MDEQ establishes, albeit more clearly, an opacity limitation of 20% 6-minute average. Specifically, Table E-02.12 clearly indicates that slag pits are sources that fall within the statutory category "from sources other than roads, lots, or storage piles" and are subject to a 20% 6-minute average standard pursuant to R 324.5524(2). [R 324.5524(2) provides the statutory limitation for both storage piles and "other than roads, lots, or storage piles," with storage piles being subject to a 5% 6-minute average opacity standard and sources "other than roads, lots, or storage piles" to a 20% 6-minute average standard.] USEPA never objected to this condition during its review of the Severstal North America Title V permit. An excerpt from the above-referenced permit is provided behind Tab 18.

Finally, U. S. Steel notes that emissions from slag pits are also distinguishable from storage piles. U. S. Steel and other steel facilities within USEPA Region V and elsewhere, typically identify slag pits as a separate source with specificity. In its MAERS reports, Great Lakes Works regularly includes slag pits a separate source or category clearly distinguishable from storage piles.

In conclusion, because none of the visible emission observations identified above exceeded a 6-minute average opacity of 20%, no violation of R 324.5524(2) of the Michigan SIP and Title V permit Condition B-I .II.B occurred on August 25, 2008.

PARAGRAPH NO. 19
USEPA ALLEGATION:

Pursuant to the October 2008 EPA information request, U.S. Steel provided slag pit opacity readings it had performed at slag pits D2 (*sic*) and B2 since January 1, 2005.

These readings include one hundred forty (140) exceedances at slag pits D2 (*sic*) and B2. Data are included as Attachment B. Visible emissions exceeding five percent (5%) opacity on a six-minute average from storage piles are violations of R 324.5524(2) of the Michigan SIP, Title V Permit Condition B-I.ILB, and 40 C.F.R. § 63.6(e).

U.S. STEEL RESPONSE:

First, U. S. Steel has interpreted the above allegation as referring to slag pits at *D4* and B2 Blast Furnaces. For all of the readings provided in Attachment B of the NOV which are below the applicable 20% 6-minute average, U. S. Steel refers USEPA to the response provided above. As noted in Attachment B to the NOV, USEPA alleges that Great Lakes Works incurred two 6-minute opacity averages exceeding 20%. With regards to the alleged violation on July 16, 2007 from the B2 Blast Furnace Slag Pit (which U. S. Steel notes was an incorrect observation obstructed by steam), U. S. Steel refers USEPA to Great Lakes Works' response dated August 3, 2007 to the MDEQ LOV issued for the same alleged violation. This correspondence is provided behind Tab 18 as noted above.

The second alleged opacity in excess of 20% 6-minute average identified in Attachment B was to have occurred at D4 Blast Furnace on October 23, 2007, in which Great Lakes Works recorded and reported a 6-minute opacity reading of 24.58%. This temporary elevated opacity was from the molten slag entering the slag pit at the trough. U. S. Steel notes that while this one 6-minute average opacity exceeded 20%, because it is one 6-minute average per hour that is not more than 27%, it is not a violation or deviation of Great Lakes Works Title V permit per General Condition A-1.2a, to which the permit shield applies, which provides:

> 2. Except as provided in subrules 2, 3, and 4 of R 336.1301, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of R 336.1301(1)(a) or (b) unless otherwise specified in this RO Permit. The grading of visible emissions shall be determined in accordance with R 336.1303. (R 336.1301(1) in pertinent part):
> a) A 6-minute average of 20% opacity, except for one 6-minute average per hour of not more than 27% opacity.
> b) A limit specified by an applicable federal new source performance standard.

U. S. Steel also disagrees with USEPA's assertion that the opacity reading provided in Attachment B are violations of 40 C.F.R. § 63.6(e). This federal provision identifies, among other things, the general MACT operation and maintenance requirements and requires owners or operators of affected sources to operate any affected source with good engineering practices, including periods of startup, shutdown, and maintenance. U. S. Steel responds that slag pits are not "affected" sources. USEPA has not established any standards under section 112 of the Clean Air Act for slag pits, i.e., there are no federal standards for slag pits in Part 63. U. S. Steel requests clarification from USEPA on how USEPA determined that Attachment B provides readings that are in violation of 40 C.F.R. § 63.6(e).

In conclusion, for the reasons expressed above and as explained in the attached documents, none of the visible emission observations provided in Attachment B identified resulted in violations of applicable Michigan regulations, Great Lakes Works' Title V permit, or 40 C.F.R. § 63.6(e).

PARAGRAPH NO. 20
USEPA ALLEGATION:

U.S. Steel provided Title V deviation reports submitted to Michigan Department of Environmental Quality (MDEQ) since March 1, 2005, pursuant to the October 2008 EPA information request. These reports include, among other things, two hundred (200) deviations from general required standards and parameters, recordkeeping standards, continuous opacity monitoring (COM) standards, failure to conduct visible emission readings and opacity deviations, and failure to conduct required inspections. Data are included as Attachment C. Failure to operate continuously according to permit requirements Is a violation of Title V, the Michigan SIP, and 40 C.F.R. §63.6(e)(l).

U.S. STEEL RESPONSE:

U. S. Steel notes that Great Lakes Works has addressed and corrected the majority of the alleged violations identified in Attachment C of the NOV by implementing an environmental management system. U. S. Steel also responds by noting that some of the deviations listed in Attachment C of the NOV are duplicates of alleged violations identified in other paragraphs of the NOV. U. S. Steel will more fully respond to the allegation on or before May 17, 2010.

PARAGRAPH NO. 21
USEPA ALLEGATION:

U.S. Steel's Operations and Maintenance Plans, developed pursuant to 40 C.F.R. Part 63, Subpart FFFFF, do not contain required operating parameter limits, including damper position parameters, at which the BOP Shop capture systems must operate continuously. Failure to set damper position parameter limits is a violation of 40 C.F.R. § 63.7800(b)(3)(ii) and Title V Permit Condition F-01.07.VI.4.

U.S. STEEL RESPONSE:

U. S. Steel set operating parameter limits during initial compliance demonstration testing, as required by the Iron and Steel MACT standard. As we explained during our meeting, U. S. Steel would like to clarify that although these parameter limits were not specifically listed in the O&M Plan, U. S. Steel had set and monitored damper position limitations (as required by the MACT) which were and are monitored continuously.

To fully respond to USEPA's allegation and to address USEPA's concerns, U. S. Steel is in the process of revising the above-referenced O&M Plan and will provide a revised Plan on or before May 17, 2010.

PARAGRAPH NO. 22
USEPA ALLEGATION:

On August 25 and 26, 2008, EPA observed emissions from a leaking bell on Furnace B2. These emissions were caused by improper sealing or other malfunction associated with the

bell system. U.S. Steel failed to cease production or otherwise take action to return the furnace to its normal operating condition in order to minimize emissions. Failure to actively mitigate emissions caused by known malfunctions is a violation of 40. C.F.R. §63.6(e)(1) and Title V Permit Condition E-01.13.III.2.4.

U.S. STEEL RESPONSE:

U. S. Steel respectfully disagrees with USEPA's assertion that violations of 40 C.F.R. § 63.6(e)(1) occurred on August 25 or August 26, 2008. The Iron and Steel MACT (Subpart FFFFF), 40 C.F.R. § 63.6(e)(1), and Permit Condition E-01.13.III.2.4 do not set or establish limits that apply to blast furnace tops. U. S. Steel refers USEPA to General Condition No. 2(a) of Great Lakes Works Title V Permit that provides:

> 2. Except as provided in subrules 2, 3, and 4 of R 336.1301, a person shall not cause or permit to be discharged into the outer
> air from *a* process or process equipment [*emphasis added*] a visible emission of a density greater than the most stringent of R 336.1301(1)(a) or (b) unless otherwise specified in this RO Permit. The grading of visible emissions shall be determined in accordance
> with R 336.1303. (R 336.1301(1) in pertinent part):
> a) A 6-minute average of 20% opacity, except for one 6-minute average per hour of not more than 27% opacity.

U. S. Steel also refers USEPA to the NESHAP Background Document where USEPA indicates that leaks from bell tops can be expected. This is because despite maintenance and other precautions, it can be difficult to maintain a gas-tight seal on the bell tops which are subject to high pressures. By design, a good seal cannot be held at the periphery of the large bell or the small bell as these areas are in the raw material flow.

While emissions from the bell top, could, at times, be an indicator that a bell top or bell top seal needs to be replaced, U. S. Steel regularly conducts visual inspections of the seating and burdening surfaces to determine when maintenance and what types of maintenance is appropriate whether or not emissions form the bell top are observed. By way of further response, U. S. Steel refers USEPA to U. S. Steel's response to the Clean Air Act § 114 Inquiry No. 21 where U. S. Steel provided a recent history of bell top maintenance at Great Lakes Works.

While U. S. Steel respectfully disagrees with many of U. S. EPA's allegations, we appreciate the opportunity to respond to the NOV/FOV and we look forward to resolving any outstanding issues expeditiously. We appreciate your continued attention and cooperation. Should you have any questions regarding this correspondence, please contact me.

Sincerely,

David W. Hacker

cc: Brian Dickens, PE (EPA) – via email and express mail
David Rintoul (USS) – via email
Mark Barnes (USS) – via email
Mark Gornick (USS) – via email
David Smiga, Esq. (USS) – via email
Tishie Woodwell (USS) - via email
Mark Jeffrey (USS) - via email

TAB 15

To Mark L Gornick

Re EPA NOV – Opacity Observation sheet for October 20, 2006

Per our conversation, the visible observation sheets for October 20, 2006 identify the facility as, "B2 cast house- stack test." These sheets provide VEOs being performed at the cast house roof monitor while the casthouse baghouse stack test was being performed. No baghouse stack opacity observations are required to be taken from the baghouse stack during the baghouse stack test nor were any opacity readings taken during the stack test.

Great Lakes and Veolia Water have since change the report format to require the observer to make a notation that "roof monitor VEOs" are being observed in the facility section and "Stack testing" will be in the comments section. Only the description of the Source being observed will be identified in the Facility section of the form. If I can be of any further assistance, please contact me.

Veolia Water
Environmental Tech

4/30/10

D. Paul Bush
Cert id # 378924

TAB 17

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF THE DIRECTOR

In the matter of administrative proceedings against **UNITED STATES STEEL CORPORATION-GREAT LAKES WORKS**, a corporation organized under the laws of the State of Michigan and doing business at #1 Quality Drive, in the City of Ecorse, County of Wayne, State of Michigan	AQD No. 1-2005 SRN: A7809

STIPULATION FOR ENTRY OF FINAL ORDER
BY CONSENT

This proceeding resulted from allegations by the Michigan Department of Environmental Quality ("MDEQ") Air Quality Division ("AQD") against United States Steel Corporation-Great Lakes Works, ("Company"), a Michigan corporation located at #1 Quality Drive in the City of Ecorse, County of Wayne, State of Michigan, with State Registration Number ("SRN") A7809. The MDEQ alleges that the Company is in violation of Special Conditions listed in Permit to Install (PTI) Nos. 256-02 and 414-96, the Michigan Administrative Code ("MAC"), 2000 AACS R 336.1301 ("Rule 301"), and MAC, 2002 AACS R 336.1910 ("Rule 910"). Specifically, the MDEQ alleges that the Company has failed to conduct the required stack test and has failed to maintain compliance with particulate matter (PM) emission limits at its "B" Blast Furnace, has failed to implement its Malfunction Abatement Plan nor keep its No. 5 coke battery quench tower in a good state of repair, has not maintained its air cleaning devices in a satisfactory manner, and has exceeded the opacity standard greater than that allowed by Rule 301 at its Basic Oxygen Furnace ("BOF") roof monitor and Electrostatic Precipitator (ESP) stack, as cited herein and in the Letters of Violation ("LOV") dated March 4, 2004, April 1, 2004, April 20, 2004, June 28, 2004, and August 24, 2004. The Company and MDEQ stipulate to the termination of this proceeding by entry of a Stipulation for Entry of a Final Order by Consent ("Consent Order").

The Company and MDEQ stipulate as follows:

1. The Natural Resources and Environmental Protection Act, 1994 PA 451, ("Act 451"), MCL 324.101 et seq is an act that controls pollution to protect the environment and natural resources in the State.

2. Article II, Pollution Control, Part 55 of Act 451 ("Part 55"), MCL 324.5501 et seq provides for air pollution control regulations in this State.

3. The Michigan Department of Natural Resources ("MDNR") is authorized pursuant to Section 5503 of Part 55 to administer and enforce all provisions of Part 55. Section 301 of Part 3 provides the authority to the Director of the MDNR to delegate powers and duties.

4. The MDEQ was created as a principal department within the Executive Branch of the State of Michigan pursuant to Executive Order 1995-18. All statutory authority, powers, duties, functions and responsibilities of the MDNR AQD were transferred to the Director of the MDEQ ("Director").

5. The Director has delegated authority to the Chief of the AQD ("AQD Chief") to enter into this Consent Order.

6. The termination of this matter by a Consent Order pursuant to Section 5528 of Part 55 is proper and acceptable.

7. The Company and the MDEQ agree that the signing of this Consent Order is for settlement purposes only and does not constitute an admission by the Company that the law has been violated.

8. This Consent Order becomes effective on the date of execution ("effective date of this Consent Order") by the AQD Chief.

9. This Consent Order resolves violations at the "B" blast furnace, the No.5 coke battery quench tower and the BOF roof monitor and ESP stack as cited in LOVs dated March 4, 2004, April 1, 2004, April 20, 2004, June 28, 2004, and August 24, 2004.

10. The Company shall achieve compliance with the aforementioned regulations in accordance with the requirements contained in this Consent Order.

11. COMPLIANCE PROGRAM AND IMPLEMENTATION SCHEDULE

A. Control Program, Testing, and Installation Schedule

1. "B" Blast Furnace Casthouse Emission Control Equipment

a. In October 2003, it was determined that a new baghouse was required for the "B" Blast Furnace and a compliance plan was submitted to MDEQ by the Company on January 12, 2004. The Company, prior to January 1, 2004, commenced engineering to develop design parameters for emission control technology and to verify the feasibility of the baghouse technology. The Company, in July 2004, placed an order for the new baghouse. On August 31, 2004, the Company submitted a revised compliance plan to the AQD Southeast Michigan District office containing details for the installation of the new baghouse.

b. On September 30, 2004, the Company began demolition activities for the baghouse construction site preparation.

c. By March 31, 2005, the Company shall begin installation of the baghouse foundations and shall notify the AQD Southeast Michigan District Supervisor in writing that installation has begun.

d. By July 31, 2005, the Company shall complete construction of the baghouse and shall notify the AQD Southeast Michigan District Supervisor in writing that construction has been completed.

e. By September 30, 2005, the Company shall commence operation of the baghouse and shall notify the AQD Southeast Michigan District Supervisor, in writing, that operation has begun.

f. Within ninety (90) days of commencing operation of the new baghouse for the "B" Blast Furnace, the Company shall conduct stack testing at the "B" Blast Furnace stack for PM in accordance with methods and procedures approved by the AQD Technical Programs Unit Supervisor to demonstrate compliance with the emission limitations specified in PTI No. 256-02 and Renewable Operating Permit No. 199600132 ("ROP"). The PTI is attached hereto as Exhibit A . The ROP shall be attached hereto when issued as Exhibit B.

g. Sixty (60) days prior to the approved test date, the Company shall submit a test plan which meets the requirements specified in Exhibit C of this Consent Order to the AQD Southeast Michigan District Supervisor and the AQD Technical Programs Unit Supervisor for approval.

h. Not less than seven (7) days prior to the testing date, the Company, or its authorized agent, shall notify the AQD Southeast Michigan District Supervisor and the AQD Technical Programs Unit Supervisor, in writing, of the time and place of the test and who shall conduct it. A representative of the AQD shall have the opportunity to witness the test.

i. Within forty-five (45) days after the test date, the Company shall submit to the AQD Southeast Michigan District Supervisor and the AQD Technical Programs Unit Supervisor a test report which includes the test data and results, in accordance with the requirements specified in Exhibit C of this Consent Order.

j. By December 31, 2005, PM emissions from the "B" Blast Furnace Cast House Operations shall not exceed 0.0075 grains per dry standard cubic feet, as specified in Table E-01.13 of Exhibit B.

2. Coke Plant Quench Tower

a. On August 2, 2004, the Company began the installation of the baffles required to bring the quench tower into compliance with the appropriate air use permit(s).

b. On August 25, 2004, the Company completed the installation of the required baffles for the quench tower and began operation of the quench tower in compliance with the appropriate air use permit(s).

3. BOF Roof Monitor Compliance

a. In response to emissions from the BOF roof monitor, the Company initiated regular continuous improvement BOF emission reduction meetings. The Company also retained consultants to conduct the following two evaluations:

i) Emission control and ventilation technologies, and

ii) Current operating practices.

Recommendations of the consultants are currently being evaluated and implemented, where appropriate.

b. By December 31, 2004, the Company will complete the evaluations of the emission control and ventilation technologies, and the current operating practices.

c. By January 31, 2005, the Company will submit a revised compliance plan to the AQD Southeast Michigan District Supervisor. If a revised compliance program for the roof monitors is required based on the evaluations above, it will include milestone dates for final detailed engineering, procurement of equipment, beginning of on-site construction, completion of construction and shakedown period for improvements. Once approved, the BOF roof monitor revised compliance plan shall be attached to and made enforceable under this Consent Order.

d. Within thirty (30) days of achieving compliance or no later than May 22, 2006, the Company shall begin conducting once every two weeks, a Method 9c opacity observation at the roof monitor, for a duration not less than one full steel production cycle (tap to tap), using an independent certified Method 9 observer to verify compliance. The Company shall provide, on a monthly basis, to the AQD Southeast Michigan District Supervisor, in writing, a schedule of the date, approximate time and place of the planned Method 9c opacity observations, and who shall conduct them. The date and time will be subject to change based on operating schedules, weather conditions or other unforeseen conditions. The Company shall also submit the results of the Method 9c observations to the AQD Southeast Michigan District Supervisor on a monthly basis.

e. By May 22, 2006, visible emissions from the No. 2 Basic Oxygen Process Shop shall not exceed 20 percent opacity as determined on a 3 minute rolling average basis, at the roof monitor, as specified in Table F-01.07 of Exhibit B. Compliance shall be based on the visual observation data required per paragraph d. above.

4. BOF ESP Effectiveness Compliance Project

a. The Company has retained consultants prior to September 30, 2004 to conduct an evaluation of the internal components of the BOF ESP in order to determine the scope of repairs necessary to return the ESP to designed specifications.

b. By December 31, 2004, the Company will complete the evaluation of the internal components of the BOF ESP.

c. By January 31, 2005, the Company will submit a revised compliance plan to the AQD Southeast Michigan District Supervisor for approval, based on the evaluation of the internal components of the BOF ESP, which will include dates for the final detailed engineering, procurement of equipment, beginning of on-site construction, completion of construction and shakedown period for improvements. Once approved, the BOF ESP revised compliance plan shall be attached to, and made enforceable under this Consent Order.

5. BOF ESP Monitoring and Controls Compliance Project

a. The Company installed a new PS1 compliant COM (Continuous Opacity Monitor) in the BOF ESP stack. The COM calibration has been certified and the COM is in operation.

b. The Company retained a consultant to recommend modifications/improvements to the BOF ESP controls. Based on these recommendations, the Company developed a project for the installation of ESP controls which includes instrumentation, sensors, monitors and a means to adjust key operating parameters. Funding for the project has been approved.

c. By October 31, 2004, the Company began the installation of the BOF ESP control equipment and notified the AQD Southeast Michigan District Supervisor in writing that installation has begun.

d. By May 31, 2005, the Company shall have completed the installation and began operation of the BOF ESP control equipment and shall notify the AQD Southeast Michigan District Supervisor in writing that installation has been completed and operation has begun.

6. BOF ESP Full Compliance

a. By May 22, 2006, the visible emissions from the BOF ESP stack shall not exceed 20 percent opacity, as determined on a 6 minute rolling average, as specified in MAC Rule 301(a). Compliance shall be based on visual observation data required by paragraph f. below.

b. Within thirty (30) days of achieving compliance or no later than May 22, 2006, the Company shall begin conducting monthly Method 9 opacity observations at the ESP stack for a duration of not less than one full steel production cycle (tap to tap), using an independent certified Method 9 observer to verify compliance. The Company shall provide, on a monthly basis, to the AQD Southeast Michigan District Supervisor, in writing, a schedule of the date, approximate time and place of the planned Method 9 opacity observations and who shall conduct them. The date and time will be subject to change based on operating schedules, weather conditions or other unforeseen conditions. The Company shall also submit the results of the Method 9 observations to the AQD Southeast Michigan District Supervisor on a monthly basis.

B. Operation and Maintenance Program

The Company shall develop an operating and maintenance program to systematically inspect and maintain the equipment listed in subparagraph 1 of this paragraph. The program, which will include a schedule for implementation, shall be developed and submitted, in writing, for approval of the AQD Southeast Michigan District Supervisor within forty five (45) days of the effective date of this Consent Order, and implemented within thirty (30) days of receipt of written approval from MDEQ. Upon approval by the MDEQ, the Operation and Maintenance Plan (OMP), or any subsequent changes to the OMP, shall be attached to and made enforceable under this Consent Order. The OMP shall be modified to include all appropriate conditions of the OMP required pursuant to CFR 63.7800(b), once the MACT becomes effective.

1. The following emission control equipment shall be included in the program:

a. "A" Blast Furnace casthouse emission control baghouse.

b. "B". Blast Furnace casthouse emission control baghouse, after December 31, 2005.

c. "D" Blast Furnace casthouse emission control baghouse.

d. No. 2 BOF Shop primary emission control electrostatic precipitator, after May 22, 2006.

e. No. 2 BOF Shop No. 1 secondary emission control baghouse.

f. No. 2 BOF Shop No. 2 hot metal transfer/desulfurization/slag skimming baghouse.

g. No. 1 Argon stirring station baghouse.

h. No. 2 Argon stirring/LMF baghouse.

i. Vacuum degasser material handling baghouse.

j. Continuous Galvanizing annealing furnace selective catalytic reduction (SCR) NOx control system.

2. For each particulate emission capture system listed in subparagraph 1 above, the program shall include the following operation and maintenance elements:

a. Monthly inspections for the proper operation of all pressure sensors, dampers and damper switches.

b. Monthly inspections of integrity of ductwork, hoods and fan housings.

c. A requirement to repair any defect that could reasonably be expected to result in noncompliance identified during any inspection within thirty (30) days. Any repair anticipated to extend beyond thirty days shall require a compliance plan be submitted to the AQD Southeast Michigan District Supervisor for approval. The compliance plan shall include details of activities necessary to bring the facility into compliance with corresponding milestone dates included.

d. Preventive maintenance for each control device.

e. Maintain records of all inspections and required remedial actions.

3. For the Continuous Galvanizing annealing furnace selective catalytic reduction (SCR) NOx control system, the program shall include the following operation and maintenance elements:

a. Monthly inspections of all systems associated with the urea feed system.

b. Preventive maintenance consistent with manufacturer's recommendations, including a requirement for periodic determination of the functional viability of the catalyst.

c. A requirement to repair any defect that could reasonably be expected to result in noncompliance identified during any inspection within a reasonable period.

d. Maintain records of all inspections and required remedial actions.

4. The Company shall develop and implement a written procedure to assure compliance with the reporting and recordkeeping provisions of MAC 1995 AACS R336.1912.

5. In the event that the Company identifies any new systemic noncompliance issues in the execution of the operating and maintenance program, the Company will submit, within thirty (30) days of identification of the systemic problem, a compliance plan to the AQD Southeast Michigan District Supervisor for approval.

12. SUPPLEMENTAL ENVIRONMENTAL PROJECT

In partial settlement of the violations alleged in the LOVs cited in this Consent Order, and in addition to the settlement amount referenced in paragraph 15 of this Consent Order, the Company agrees to undertake the Supplemental Environmental Project (SEP) described in Exhibit D, which is attached to, incorporated by reference, and made an enforceable part of this Consent Order. Performance of the SEP will benefit the environment and is a project that the Company is not otherwise legally required to perform. The Company agrees to implement the SEP in accordance with the details specified in Exhibit D and the following terms and conditions.

A. The total expenditure for the SEP shall not be less than $200,000.00. All costs of the SEP shall be the responsibility of the Company. For any SEP that is fully and completely implemented, to the extent that the actual expenditures for the SEP totals less than $200,000.00, the Company shall pay to the Michigan Department of Environmental Quality, within 30 days of submission of the SEP certificate of completion required in subparagraph G below, the amount of the monetary shortfall.

B. The plan included as Exhibit D contains a schedule, including specific dates for the implementation of the SEP. The Company shall fully implement all aspects of the SEP within the specified schedule.

C. The Company certifies that the Company is not otherwise required by any local, state, or federal statute, regulation, rule, order, decree, permit, or other law or agreement to develop or implement the SEP activities specified in Exhibit D. The Company further certifies that the Company has not received, and is not presently negotiating to receive, a credit for the SEP as part of any other enforcement action or any grant from the state, Environmental Protection Agency (EPA) or any other entity.

D. In the event the Company fails to fully and completely implement the SEP as provided herein to the reasonable satisfaction of the MDEQ, the MDEQ will provide written notice to the

Company describing the nature of the deficiency. The Company shall have thirty (30) days from receipt of the notice to submit documentation to the MDEQ demonstrating that the deficiency has been corrected. In the event the deficiency is not corrected to the satisfaction of the MDEQ, the Company will be notified and the Company will be in violation of the Consent Order and required to pay a stipulated penalty of $200,000.00 minus the amount spent on the SEP to that date to the MDEQ within thirty (30) days of written notification by the MDEQ. The amount of the stipulated penalty may be reduced or waived by the MDEQ if the Company made good faith and timely efforts to complete the project. Payment of stipulated penalties under the terms of this paragraph shall satisfy the Company's obligation to complete the SEP under this Consent Order.

E. The Company agrees that any public statement, oral or written, making reference to the SEP shall include the following language: "This project was undertaken in connection with the settlement of an enforcement action taken by the Michigan Department of Environmental Quality for violations of air law."

F. After the effective date of this Consent Order, until completion of all activities specified in Exhibit D, the Company shall provide the AQD Southeast Michigan District Supervisor with a progress report every calendar quarter. Each progress report shall include a description of the SEP activities completed in the prior calendar quarter.

G. No later than thirty (30) days after the completion of all activities specified in Exhibit D, the Company shall submit written certification of completion of the SEP to the AQD Southeast Michigan District Supervisor demonstrating that all SEP activities specified in Exhibit D have been completed in accordance with the terms and conditions of this Consent Order and Exhibit D. The certification shall be accompanied by appropriate documentation (such as invoices, receipts, etc.) to verify the total expenditure made by the Company as a result of implementing the activities specified under Exhibit D.

GENERAL PROVISIONS

13. This Consent Order in no way affects the Company's responsibility to comply with any other applicable state and federal, or local laws or regulations, including without limitation, any amendments to the federal Clean Air Act, 42 USC 7401 et seq., Act 451, Part 55 or their rules and regulations, or to the State Implementation Plan.

14. This Consent Order constitutes a civil settlement and satisfaction as to the resolution of the violations specifically addressed herein; however, it does not resolve any criminal action that may result from these same violations.

15. Within thirty (30) days after the effective date of this Consent Order, the Company shall pay to the General Fund of the State of Michigan, in the form of a check made payable to the "State of Michigan" and delivered to the Michigan Department of Environmental Quality, Financial and Business Services Division, Revenue Control, P.O. Box 30657, Lansing, Michigan 48909-8157, a settlement amount of $950,000, which includes AQD costs for investigation and enforcement. This total settlement amount shall be paid within thirty (30) days of the effective date of this Consent Order. To ensure proper credit, all payments made pursuant to this Consent Order shall include the Agreement Identification No. AQD 3243 on the face of the check. This settlement amount is in addition to any fees, taxes, or other fines that may be imposed on the Company by law.

16. On and after the effective date of this Consent Order, if the Company fails to comply with paragraphs 11.A.1.e, 11.A.1.j, 11.A.3.d, 11.A.3.e, 11.A.5.d or 11.A.6.a of this Consent Order, the Company shall pay stipulated fines of $5,000.00 per violation per day. On and after the effective date of this Consent Order, if the Company fails to comply with paragraphs 11.A.1.c, 11.A.1.d, 11.A.1.f, 11.A.3.c, 11.A.4.c, 11.A.5.c, or 11.B.1 through 11.B.4. of this Consent Order, the Company shall pay stipulated fines of $3,000.00 per violation per day. On and after the effective date of this Consent Order, if the Company fails to comply with paragraphs 11.A.1.g, 11.A.1.h, 11.A.1.i or 11.B.5. of this Consent Order, the Company shall pay stipulated fines of $1,000.00 per violation per day. On and after the effective date of this Consent Order, if the Company fails to comply with paragraphs 12. B. or 22 of this Consent Order, the Company shall pay stipulated fines of $500.00 per violation per day. Stipulated fines submitted under this Consent Order shall be by check, payable to the State of Michigan within thirty (30) days of demand and shall be delivered to the Michigan Department of Environmental Quality, Financial and Business Services Division, Revenue Control, P.O. Box 30657, Lansing, Michigan 48909-8157. To ensure proper credit, all payments shall include the Agreement Identification No. AQD 3243S on the face of the check. Payment of stipulated fines shall not alter or modify in any way the Company's obligation to comply with the terms and conditions of this Consent Order.

17. The AQD, at its discretion, may seek stipulated fines or statutory fines for any violation of this Consent Order which is also a violation of any provision of applicable federal and state law, rule,

regulation, permit, or MDEQ administrative order. However, the AQD is precluded from seeking both a stipulated fine under this Consent Order and a statutory fine for the same violation.

18. To ensure timely payment of the settlement amount assessed in paragraph 15 and any stipulated fines assessed pursuant to paragraph 16 of this Consent Order, the Company shall pay an interest penalty to the State of Michigan each time it fails to make a complete or timely payment under this Consent Order. The interest penalty shall be determined at a rate of twelve percent (12%) per year compounded annually, using the full increment of amount due as principal, calculated from the due date specified in this Consent Order until the date that delinquent payment is finally paid in full. Payment of an interest penalty by the Company shall be made to the State of Michigan in accordance with paragraph 16 of this Consent Order. Interest payments shall be applied first towards the most overdue amount or outstanding interest penalty owed by the Company before any remaining balance is applied to subsequent payment amount or interest penalty.

19. The Company agrees not to contest the legal basis for the settlement amount assessed pursuant to paragraph 15. The Company also agrees not to contest the legal basis for any stipulated fines assessed pursuant to paragraph 16 of this Consent Order, but reserves the right to dispute in a court of competent jurisdiction the factual basis upon which a demand by MDEQ of stipulated fines is made. In addition, the Company agrees that said fines have not been assessed by the MDEQ pursuant to Section 5529 of Part 55 and therefore are not reviewable under Section 5529 of Part 55.

20. This compliance program is not a variance subject to the 12 month limitation specified in Section 5538 of Part 55.

21. This Consent Order shall remain in full force and effect for a period of at least four (4) years. Thereafter, the Consent Order shall terminate only upon written notice of termination issued by the AQD Chief. Prior to issuance of a written notice of termination, the Company shall submit a request consisting of a written certification that the Company has fully complied with all the requirements of this Consent Order and has made all payments including all stipulated fines required by this Consent Order. Specifically, this certification shall include: (i) the date of compliance with each provision of the compliance program and the date any payments or stipulated fines were paid; (ii) a statement that all required information has been reported to the AQD Southeast Michigan District Supervisor; (iii) confirmation that all records required to be maintained pursuant to this Consent Order are being maintained at the facility; and, (iv) such information as may be requested by the AQD Chief. The Company is not precluded from requesting an earlier termination date. This early termination shall be

solely at the discretion of the MDEQ as circumstances may warrant and subject to the aforementioned termination requirements.

22. In the event United States Steel Corporation sells or transfers the facility with SRN A7809, it shall advise any purchaser or transferee of the existence of this Consent Order in connection with such sale or transfer. Within thirty (30) calendar days, the Company shall also notify the AQD Southeast Michigan District Supervisor, in writing, of such sale or transfer, the identity and address of any purchaser or transferee, and confirm the fact that notice of this Consent Order has been given to the purchaser and/or transferee. The purchaser and/or transferee of this Consent Order must agree, in writing, to assume all of the obligations of this Consent Order. A copy of that agreement shall be forwarded to the AQD Southeast Michigan District Supervisor within thirty (30) days of assuming the obligations of this Consent Order.

23. Prior to the effective date of this Consent Order and pursuant to the requirements of Sections 5511 and 5528(3) of Part 55, the public was notified of a 30-day public comment period and was provided the opportunity for a public hearing.

24. Section 5530 of Part 55 may serve as a source of authority but not a limitation under which the Consent Order may be enforced. Further, Part 17 of Act 451 and all other applicable laws and any other legal basis or applicable statute may be used to enforce this Consent Order.

25. The MDEQ and Company agree that the MDEQ may grant the Company an extension of the specific deadline(s) set forth in this Consent Order, including Exhibit D, if the Company has shown that the specified deadline(s) cannot be met because of circumstances beyond its control. The Company and the MDEQ also agree that the burden of proof for the extension rests solely with the Company and that the MDEQ is under no obligation to grant the extension, regardless of the proof presented. Any extension shall be preceded by a timely written request, received by the AQD Southeast Michigan District Supervisor no later than ten (10) business days prior to the pertinent deadline(s), which shall include: (i) identification of the specific deadline(s) of this Consent Order that will not be met; (ii) a detailed description of the circumstances that will prevent the Company from meeting the deadline(s); (iii) a description of the measures the Company has taken and/or intends to take to meet the required

deadline(s); (iv) the length of the extension requested and the specific date on which the obligation will be met. The granting or denial of a request for an extension of a specific deadline(s) set forth in the Consent Order shall be done so in writing by the AQD Southeast Michigan District Supervisor.

The undersigned certifies that he/she is fully authorized by the Company to enter into this Consent Order and to execute and legally bind the Company to it.

UNITED STATE STEEL CORPORATION-GREAT LAKES WORKS

DAVID H. LOHR V.P.- Plant Operations
Print Name and Title

Signature Date: Feb 11, 2005

The above signatory subscribed and sworn to before me this 11th day of February, 2005.

Nancy L. Pothier State of PA Allegheny County
Notary Public

Notarial Seal
Nancy L. Pothier, Notary Public
City Of Pittsburgh, Allegheny County
My Commission Expires Apr. 28, 2007
Member, Pennsylvania Association Of Notaries

Approved as to Content:

Dennis A. Armbruster, Acting Chief
AIR QUALITY DIVISION
DEPARTMENT OF
ENVIRONMENTAL QUALITY

Dated: Feb. 14, 2005

Approved as to Form:

Alan F. Hoffman, Section Head
ENVIRONMENTAL REGULATION SECTION
ENVIRONMENT, NATURAL RESOURCES,
AND AGRICULTURE DIVISION
DEPARTMENT OF ATTORNEY GENERAL

Dated: 2/14/05

FINAL ORDER

The Chief of the Air Quality Division having had opportunity to review the Consent Order and having been delegated authority to enter into Consent Orders by the Director of the Michigan Department of Environmental Quality pursuant to the provisions of Part 55 of Act 451 and otherwise being fully advised on the premises,

HAS HEREBY ORDERED that the Consent Order is approved and shall be entered in the record of the MDEQ as a Final Order.

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

Dennis A. Armbruster, Acting Chief
Air Quality Division

Dated: Feb. 14, 2005

EXHIBIT A

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

November 27, 2002

PERMIT TO INSTALL
256-02

ISSUED TO
National Steel Corporation – Great Lakes Operations

LOCATED AT
Zug Island
Rouge River, Michigan

IN THE COUNTY OF
Wayne

STATE REGISTRATION NUMBER
SRN: A7809

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: **November 22, 2002**	
DATE PERMIT TO INSTALL APPROVED: **November 27, 2002**	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

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Common Abbreviations / Acronyms

Common Acronyms		Pollutant/Measurement Abbreviations	
AQD	Air Quality Division	Btu	British Thermal Unit
ANSI	American National Standards Institute	°C	Degrees Celsius
BACT	Best Available Control Technology	CO	Carbon Monoxide
CAA	Clean Air Act	dscf	Dry standard cubic foot
CEM	Continuous Emission Monitoring	dscm	Dry standard cubic meter
CFR	Code of Federal Regulations	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H_2S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	NOx	Oxides of Nitrogen
MAP	Malfunction Abatement Plan	PM	Particulate Matter
MDEQ	Michigan Department of Environmental Quality	PM-10	Particulate Matter less than 10 microns diameter
MIOSHA	Michigan Occupational Safety & Health Administration	pph	Pound per hour
MSDS	Material Safety Data Sheet	ppm	Parts per million
NESHAP	National Emission Standard for Hazardous Air Pollutants	ppmv	Parts per million by volume
NSPS	New Source Performance Standards	ppmw	Parts per million by weight
NSR	New Source Review	psia	Pounds per square inch absolute
PS	Performance Specification	psig	Pounds per square inch gauge
PSD	Prevention of Significant Deterioration	scf	Standard cubic feet
PTE	Permanent Total Enclosure	sec	Seconds
PTI	Permit to Install	SO_2	Sulfur Dioxide
RACT	Reasonable Available Control Technology	THC	Total Hydrocarbons
SC	Special Condition Number	tpy	Tons per year
SCR	Selective Catalytic Reduction	µg	Microgram
SRN	State Registration Number	VOC	Volatile Organic Compounds
TAC	Toxic Air Contaminant	yr	Year
VE	Visible Emissions		

* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, altered, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **[R336.1201 (1)]**

2. If the installation, reconstruction, relocation, or alteration of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the person to whom this permit was issued, or the designated authorized agent, shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, PO Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, reconstruction, relocation, or alteration of the equipment allowed by this Permit to Install. **[R336.1201(4)]**

3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **[R336.1201(6)(b)]**

4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **[R336.1201(8), Section 5510 of Act 451, PA 1994]**

5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1) (a), (b), and (c) of R336.1219. The written request shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **[R336.1219]**

6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **[R336.1901]**

7. The owner or operator of a source, process, or process equipment shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant in excess of standards for more than one hour, or of any air contaminant in excess of standards for more than two hours, as required in this rule, to the District Supervisor, Air Quality Division. The notice shall be provided no later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the District Supervisor within ten days, with the information required in this rule. **[R336.1912]**

8. Approval of this permit does not exempt the person to whom this permit was issued from complying with any future applicable requirements which may be promulgated under Part 55 of Act 451, PA 1994 or the Federal Clean Air Act.

9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

10. Operation of this equipment may be subject to other requirements of Part 55 of Act 451, PA 1994, and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R336.1301, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R336.1303. **[R336.1301]**

    a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.

    b) A visible emission limit specified by an applicable federal new source performance standard.

    c) A visible emission limit specified as a condition of this permit to install.

12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R336.1370(2). **[R336.1370]**

13. Except as allowed by Rule 285 (a), (b), and (c), permittee shall not substitute any fuels, coatings, nor raw materials for those described in the application and allowed by this permit, nor make changes to the process or process equipment described in the application, without prior notification to and approval by the Air Quality Division. **[R336.1201(1)]**

14. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R336.2001 and R336.2003, under any of the conditions listed in R336.2001. **[R336.2001]**

SPECIAL CONDITIONS

Emission Unit Identification

Emission Unit ID	Emission Unit Description	Stack Identification
EU-"A"BLAST	"A" blast furnace emissions are controlled by the "A" casthouse emission control system (CECS), which is a collection hood followed by a baghouse (BH) and stack. The fugitive emissions that are not captured by the CECS are discharged through the roof monitor (RM) vents. "A" blast furnace emissions are also discharged through "A" stove stack.	SV-"A"BLAST(BH) and SV-"A" STOVE
EU-"B"BLAST	"B" blast furnace emissions are controlled by the "B" casthouse emission control system (CECS), which is a collection hood followed by a baghouse (BH) and stack. The fugitive emissions that are not captured by the CECS are discharged through the roof monitor (RM) vents. "B" blast furnace emissions are also discharged through "B" stove stack.	SV-"B"BLAST(BH) and SV-"B" STOVE
EU-"D"BLAST	"D" blast furnace emissions are controlled by the "D" casthouse emission control system (CECS), which is a collection hood, followed by a baghouse (BH) and stack. The fugitive emissions that are not captured by the CECS are discharged through the roof monitor (RM) vents. "D" blast furnace emissions are also discharged through "D" stove stack.	SV-"D"BLAST(BH) and SV-"D" STOVE
Changes to the equipment described in this table are subject to the requirements of R336.1201, except as allowed by R336.1278 to R336.1290.		

Flexible Group Identification

Flexible Group ID	Emission Units Included in Flexible Group	Stack Identification
FG-BLASTFURNACES	EU-"A"BLAST, EU-"B"BLAST and EU-"D"BLAST	NA

The following conditions apply to: EU-"A"BLAST

Emission Limits

	Pollutant	Equipment	Limit	Time Period	Testing/ Monitoring Method	Applicable Requirement
1.1	PM	EU-"A"BLAST(BH)	0.0075 gr/dscf	Test Protocol	G.C. 14	R336.1331

Visible Emission Limits

1.2 Visible emissions from baghouse emission control of the EU-"A"BLAST shall not exceed a six-minute average of 10 percent opacity. **[R336.1331, R336.1361]**

1.3 Visible emissions from roof monitors of the EU-"A"BLAST shall not exceed a six-minute average of 20 percent opacity based on EPA Method 9. **[R336.1331, R336.1358]**

Process/Operational Limits

1.4 The permittee shall not operate EU-"A"BLAST unless the baghouse control system is installed, maintained, and operated in a satisfactory manner. **[R336.1301, R336.1331]**

Equipment

1.5 The permittee shall not simultaneously shut down more than one baghouse compartment. **[R336.1301, 336.1331]**

Monitoring

1.6 The permittee shall perform a non-certified visible emission observation for the baghouse emission control of the EU-"A"BLAST at least once a week during blast furnace processing activity. The permittee shall also conduct visible emissions observations for the baghouse emission control of the EU-"A"BLAST using Method 9 at least once per month. **[R336.1301, 336.1331]**

1.7 The permittee shall perform a non-certified visible emission observation for the roof monitors of the EU-"A"BLAST at least once a week during blast furnace processing activity. The permittee shall also conduct visible emissions observations for the roof monitors of the EU-"A"BLAST using Method 9 at least once every two weeks. **[R336.1301, 336.1331]**

Recordkeeping / Reporting / Notification

1.8 The permittee shall keep record of baghouse compartment shutdowns. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1301, R336.1331]**

1.9 The permittee shall initiate corrective action upon observation of visible emissions for the baghouse emission control of the EU-"A"BLAST exceeding the visible emission limits of this permit and shall keep a written record of each required observations and any corrective actions taken. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1301, 336.1331]**

1.10 The permittee shall initiate corrective action upon observation of visible emissions for the roof monitors of the EU-"A"BLAST exceeding the visible emission limits of this permit and shall keep a written record of each required observations and any corrective actions taken. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1301, 336.1331]**

Stack/Vent Restrictions

	Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement
1.11a	SV-"A"BLAST(BH)	129.3	68	40 CFR 52.21(c) & (d)
1.11b	SV-"A"STOVE	120	250	40 CFR 52.21(c) & (d)
	The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.			

The following conditions apply to: EU-"B"BLAST

Emission Limits

	Pollutant	Equipment	Limit	Time Period	Testing/ Monitoring Method	Applicable Requirement
2.1	PM	EU-"B"BLAST(BH)	0.0075 gr/dscf	Test Protocol	G.C. 14	R336.1331

Visible Emission Limits

2.2 Visible emissions from baghouse emission control of the EU-"B"BLAST shall not exceed a six-minute average of 10 percent opacity. **[R336.1331, R336.1361]**

2.3 Visible emissions from roof monitors of the EU-"B"BLAST shall not exceed a six-minute average of 20 percent opacity based on EPA Method 9. **[R336.1331, R336.1358]**

Process/Operational Limits

2.4 The permittee shall not operate EU-"B"BLAST unless the baghouse control system is installed, maintained, and operated in a satisfactory manner. **[R336.1301, R336.1331]**

Equipment

2.5 The permittee shall not simultaneously shut down more than one baghouse compartment. **[R336.1301, 336.1331]**

Monitoring

2.6 The permittee shall perform a non-certified visible emission observation for the baghouse emission control of the EU-"B"BLAST at least once a week during blast furnace processing activity. The permittee shall also conduct visible emissions observations for the baghouse emission control of the EU-"B"BLAST using Method 9 at least once per month. **[R336.1301, 336.1331]**

2.7 The permittee shall perform a non-certified visible emission observation for the roof monitors of the EU-"B"BLAST at least once a week during blast furnace processing activity. The permittee shall also conduct visible emissions observations for the roof monitors of the EU-"B"BLAST using Method 9 at least once every two weeks. **[R336.1301, 336.1331]**

Recordkeeping / Reporting / Notification

2.8 The permittee shall keep record of baghouse compartment shutdowns. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1301, R336.1331]**

2.9 The permittee shall initiate corrective action upon observation of visible emissions for the baghouse emission control of the EU-"B"BLAST exceeding the visible emission limits of this permit and shall keep a written record of each required observations and any corrective actions taken. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1301, 336.1331]**

2.10 The permittee shall initiate corrective action upon observation of visible emissions for the roof monitors of the EU-"B"BLAST exceeding the visible emission limits of this permit and shall keep a written record of each required observations and any corrective actions taken. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1301, 336.1331]**

Stack/Vent Restrictions

	Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement
2.11a	SV-"B"BLAST(BH)	120	73	40 CFR 52.21(c) & (d)
2.11b	SV-"B"STOVE	120	200	40 CFR 52.21(c) & (d)
	The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.			

The following conditions apply to: EU-"D"BLAST

Emission Limits

	Pollutant	Equipment	Limit	Time Period	Testing/ Monitoring Method	Applicable Requirement
3.1	PM	EU-"D"BLAST(BH)	0.0052 gr/dscf	Test Protocol	G.C. 14	R336.1331

Visible Emission Limits

3.2 Visible emissions from baghouse emission control of the EU-"D"BLAST shall not exceed a six-minute average of 10 percent opacity. **[R336.1331, R336.1361]**

3.3 Visible emissions from roof monitors of the EU-"D"BLAST shall not exceed a six-minute average of 20 percent opacity based on EPA Method 9. **[R336.1331, R336.1358]**

Process/Operational Limits

3.4 The permittee shall not operate EU-"D"BLAST unless the baghouse control system is installed, maintained, and operated in a satisfactory manner. **[R336.1301, R336.1331]**

Equipment

3.5 The permittee shall not simultaneously shut down more than one baghouse compartment. **[R336.1301, 336.1331]**

Monitoring

3.6 The permittee shall perform a non-certified visible emission observation for the baghouse emission control of the EU-"D"BLAST at least once a week during blast furnace processing activity. The permittee shall also conduct visible emissions observations for the baghouse emission control of the EU-"D"BLAST using Method 9 at least once per month. **[R336.1301, 336.1331]**

3.7 The permittee shall perform a non-certified visible emission observation for the roof monitors of the EU-"D"BLAST at least once a week during blast furnace processing activity. The permittee shall also conduct visible emissions observations for the roof monitors of the EU-"D"BLAST using Method 9 at least once every two weeks. **[R336.1301, 336.1331]**

Recordkeeping / Reporting / Notification

3.8 The permittee shall keep record of baghouse compartment shutdowns. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1301, R336.1331]**

3.9 The permittee shall initiate corrective action upon observation of visible emissions for the baghouse emission control of the EU-"D"BLAST exceeding the visible emission limits of this permit and shall keep

a written record of each required observations and any corrective actions taken. All records shall be kept on file for a period of at least five years and made available to the Department upon request.
[R336.1301, 336.1331]

3.10 The permittee shall initiate corrective action upon observation of visible emissions for the roof monitors of the EU-"D"BLAST exceeding the visible emission limits of this permit and shall keep a written record of each required observations and any corrective actions taken. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1301, 336.1331**

Stack/Vent Restrictions

	Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement
3.11a	SV-"D"BLAST(BH)	129.25	68	40 CFR 52.21(c) & (d)
3.11b	SV-"D"STOVE	120	230	40 CFR 52.21(c) & (d)
	The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.			

The following conditions apply to: FG-BLASTFURNACES

Emission Limits

	Pollutant	Equipment	Limit	Time Period	Testing/ Monitoring Method	Applicable Requirement
4.1a	PM	FG-BLASTFURNACES	447.4 TPY	12-month rolling time period as determined at the end of each calendar month	SC Nos. 4.3, 4.4, 4.5, 4.6, 4.7 and Appendix A	R336.1205(3)
4.1b	PM_{10}	FG-BLASTFURNACES	352.2 TPY	12-month rolling time period as determined at the end of each calendar month	SC Nos. 4.5, 4.6, 4.7 and Appendix A	R336.1205(3)
4.1c	NO_X	FG-BLASTFURNACES	821.4 TPY	12-month rolling time period as determined at the end of each calendar month	SC Nos. 4.4, 4.5, 4.6, 4.7 and Appendix A	R336.1205(3)

Material Usage Limits

4.2 The total iron produced from the FG-BLASTFURNACES shall not exceed a maximum of 3,718,000 tons per 12-month rolling time period as determined at the end of each calendar month. **[R336.1205(3)]**

Testing

4.3 Within one year after commencement of trial operation, a PM emission factor shall be determined for the baghouse (BH) emission control of the EU-"A"BLAST, by testing at owner's expense, in accordance with Department requirements. Within one year after commencement of trial operation, excluding shutdown days, a PM emission factor shall be determined for the baghouse (BH) emission control of the EU-"B"BLAST, by testing at owner's expense, in accordance with Department requirements. Within one year of permit issuance, excluding shutdown days, a PM emission factor shall be determined for the baghouse (BH) emission control of the EU-"D"BLAST, by testing at owner's expense, in accordance with

Department requirements. Testing for the emission factor shall encompass at least one full cycle of production operations (i.e., cast to cast) per run. In addition, the production rates shall be measured. No less than 60 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.

[R336.1205, R336.1299, R336.2001, R336.2003, R336.2004]

4.4 Within one year of issuance of the permit, PM and NO_X emission factors shall be determined for the combustion of blast furnace gas for one of the FG-BLASTFURNACES, by testing at owner's expense, in accordance with Department requirements. In addition, the blast furnace gas usage rate shall be simultaneously measured and recorded. Testing for PM will be performed in accordance with Method 5D unless another test method is proposed in the testing protocol and approved by AQD. No less than 60 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.

[R336.1205(3), R336.2001, R336.2003, R336.2004]

Monitoring

4.5 The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the monthly natural gas usage rate in cubic feet. **[R336.1205 (3)]**

4.6 The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the monthly blast furnace gas usage rate in cubic feet. **[R336.1205(3)]**

Recordkeeping / Reporting / Notification

4.7 The permittee shall keep, in a satisfactory manner, monthly and annual iron production rates. Annual iron production rates shall be based on a 12-month rolling time period as determined at the end of each calendar month. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1205 (3)]**

4.8 The permittee shall keep, in a satisfactory manner, monthly and annual natural gas usage records, indicating the total amount of natural gas used, in cubic feet, on a calendar month basis. Annual natural gas usage records shall be based on a 12-month rolling time period as determined at the end of each calendar month **[R336.1205 (3)]**

4.9 The permittee shall keep, in a satisfactory manner, monthly and annual blast furnace gas usage records, indicating the total amount of blast furnace gas used, in cubic feet, on a calendar month basis. Annual blast furnace gas usage records shall be based on a 12-month rolling time period as determined at the end of each calendar month **[R336.1205(3)]**

4.10 The permittee shall keep, in a satisfactory manner, calculations determining the monthly and annual mass emissions of PM, PM_{10} and NO_X. Annual emission calculations shall be based on a 12-month rolling time period as determined at the end of each calendar month. Separate calculations shall be conducted for each Emission Unit and for the Flexible Group. All calculations shall be conducted in accordance with the methodology specified in Appendix A. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1205 (3)]**

Appendix A
Emission Calculation Methodology

Baghouse Emissions

Baghouse emissions are based on the reported manufacturer's guaranteed emission rates in pounds per dry standard cubic foot, multiplied by the measured exhaust flow rates for each of the three blast furnaces. These values will be used as a default until stack testing is conducted. Baghouse PM_{10} values are set equal to 100 percent of PM.

Baghouse PM and PM_{10} emission rates (lb/ton iron)	=	0.0908 lb per ton of iron produced, for EU-"A" Blast 0.0505 lb per ton of iron produced, for EU-"B" Blast 0.0433 lb per ton of iron produced, for EU-"D" Blast or most recent baghouse stack test results
Annual Baghouse PM and PM_{10} emissions (tons/12 month rolling time period as determined at the end of each calendar month)	=	$\sum_{i=1}^{12}$ BH (lb/ton iron) x Iron Produced $_i$ (tons) BH = the Baghouse emission rates from above, in lb/ton iron Iron Produced $_i$ = the iron production during calendar month i, in tons

Fugitive (Roof Monitor) Emissions

Fugitive emissions are estimated based on an assumed 96% capture efficiency of the casthouse emission control system (CECS) collection hood. The CECS consists of a collection hood followed by a baghouse. Fugitive emissions, those not collected by the CECS, are vented from the roof monitor vents. Fugitive emission values are based on the calculated/measured baghouse emission rates determined above following the equation listed below using an assumed 98% BHCE. Fugitive PM_{10} values are set equal to 60 percent of PM.

Roof Monitor PM emission rate (lb/ton iron)	=	0.1892 lb per ton of iron produced, for EU-"A" Blast 0.1052 lb per ton of iron produced, for EU-"B" Blast 0.0902 lb per ton of iron produced, for EU-"D" Blast or as calculated from most recent baghouse stack test results
Roof Monitor PM_{10} emission rate (lb/ton iron)	=	0.1135 lb per ton of iron produced, for EU-"A" Blast 0.0631 lb per ton of iron produced, for EU-"B" Blast 0.0541 lb per ton of iron produced, for EU-"D" Blast or as calculated from most recent baghouse stack test results
$PM = \frac{\text{Baghouse PM} \times 0.04}{0.96 \times (1 - 0.98)}$		$PM_{10} = \frac{\text{Baghouse } PM_{10} \times 0.60 \times 0.04}{0.96 \times (1 - 0.98)}$
Annual Roof Monitor PM and PM_{10} emissions (tons/12 month rolling time period as determined at the end of each calendar month)	=	$\sum_{i=1}^{12}$ RM (lb/ton iron) x Iron Produced $_i$ (tons) RM = the Roof Monitor emission rate from above, in lb/ton iron Iron Produced $_i$ = the iron production during calendar month i, in tons

Blast Furnace Gas Combustion Emissions

Blast Furnace Gas (BFG) combustion PM and NO_X emissions are based on emission factors. Typical blast furnace gas heating values are approximately 75-90 Btu per cubic foot. These emission factors will be used as a default until stack testing is conducted. Blast Furnace Gas PM_{10} values are set equal to 100 percent of PM.

Blast Furnace Gas Combustion PM and PM_{10} emission rate (lb/MMBtu)	=	0.0322 lb per million British Thermal Units or most recent stove stack test results
Annual Blast Furnace Gas Combustion PM and PM_{10} emissions (tons/ 12 month rolling time period as determined at the end of each calendar month)	=	$\sum_{i=1}^{12}$ BFG (lb/MMBtu) x BFG (ft^3) x HV (Btu/ft^3) BFG (lb/MMBtu) = the Blast Furnace Gas emission rates from above BFG (ft^3) = the Blast Furnace Gas used during calendar month i HV = the Blast Furnace Gas heating value as measured

Blast Furnace Gas Combustion NO_X emission rate (lb/MMBtu)	=	0.256 lb per million British Thermal Units or most recent stove stack test results
Annual Blast Furnace Combustion NO_X emissions (tons/ 12 month rolling time period as determined at the end of each calendar month)	=	$\sum_{i=1}^{12}$ BFG (lb/MMBtu) x BFG (ft^3) x HV (Btu/ft^3) BFG (lb/MMBtu) = the Blast Furnace Gas emission rate from above BFG (ft^3) = the Blast Furnace Gas used during calendar month i HV = the Blast Furnace Gas heating value as measured

Natural Gas Combustion Emissions

Natural Gas (NG) combustion PM and NO_X emissions are based on AP-42 emission factors. Typical natural gas heating values are approximately 1000 Btu per cubic foot. Natural Gas PM_{10} values emission rates are set equal to 100 percent of PM.

Natural Gas Combustion PM and PM_{10} emission rate (lb/MMBtu)	=	0.003 lb per million British Thermal Units
Annual Natural Gas Combustion PM and PM_{10} emissions (tons/ 12 month rolling time period as determined at the end of each calendar month)	=	$\sum_{i=1}^{12}$ NG (lb/MMBtu) x NG (ft^3) x 1000 (Btu/ft^3) NG (lb/MMBtu) = the Natural Gas emission rate from above NG (ft^3) = the Natural Gas used during calendar month i

Natural Gas Combustion NO_X emission rate (lb/MMBtu)	=	0.140 lb per million British Thermal Units
Annual Natural Gas Combustion NO_X emissions (tons/12 month rolling time period as determined at the end of each calendar month)	=	$\sum_{i=1}^{12}$ NG (lb/MMBtu) x NG (ft^3) x 1000 (Btu/ft^3) NG (lb/MMBtu) = the Natural Gas emission rate from above NG (ft^3) = the Natural Gas used during calendar month i

EXHIBIT C

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY DIVISION

FORMAT FOR SUBMITTAL OF SOURCE EMISSION TEST PLANS AND REPORTS

April 2004

INTRODUCTION

The source emission test is often the ultimate determination of compliance. The results of a test are of great significance to both the regulatory agency and the source. Since the results often determine the course of future enforcement discussions between the agency and the source, it is important that the test be performed in a valid and representative manner. The complex nature of the various sampling methods places great responsibility on both agency and testing personnel to assure each test is an accurate representation of a source's actual emissions.

The objective of this document is to describe the Air Quality Division's (AQD's) technical submittal requirements for a source test. The format described applies to the requirements of Michigan Department of Environmental Quality Rule 1001 (4), and to any other emission test submitted for reasons such as a permit requirement, for a consent order or consent judgment, or at the request of the AQD.

TEST PLAN SUBMITTAL

In order to establish uniform requirements and help ensure proper test methods and procedures are employed, **the information specified below should be submitted to the appropriate district office and the Technical Programs Unit in Lansing,** at least 30 days prior to the scheduled test date. A complete submittal will minimize the possibility of a test rejection as a result of improper sampling or data collection methods.

Testing shall be performed in strict accordance with procedures specified in the Code of Federal Regulations, Title 40, Part 60 (Standards of Performance for New Stationary Sources, Appendix A, as amended), Part 61 (National Emission Standards for Hazardous Air Pollutants, Appendix B), and Part 51 (Requirements for Preparation, Adoption, and Submittal of Implementation Plans, Appendix M); and the Michigan Department of Environmental Quality Rules, Part 10, Intermittent Testing and Sampling. Any variations in the sampling or analytical procedures must be described in the test plan and receive approval from the division prior to testing. If state or federal test methods are not available for the pollutants of concern or the nature of the test site makes it impractical to use them, other methods may be proposed as necessary.

While the specific items in the test plan will vary depending on the source and pollutants of interest, the following format should be utilized:

1. Identification and a brief description of the source to be tested. The description should include:
   a. names, addresses and telephone numbers of the contacts for information regarding the source and the test plan,
   b. type of industrial process or combustion facility,
   c. type and quantity of raw and finished materials used in the process,
   d. description of any cyclical or batch operations which would tend to produce variable emissions with time,
   e. basic operating parameters used to regulate the process, and
   f. rated capacity of the process. Process capacity can be demonstrated by calculating an average and maximum production reate using facility records. Based on these figures the facility shall include a production rate to be maintained during emission testing.

2. A brief description of any air pollution control equipment associated with the process:
   a. type of control device,
   b. operating parameters, and
   c. rated capacity and efficiency,
   d. any maintenance activity on the air pollution control equipment within the last three months.
3. Applicable permit number and emission limits for the process to be tested.
4. Identify all pollutants to be measured.
5. A description of the sampling train(s) to be used, including schematic diagrams if appropriate.
6. Detailed sampling and analysis procedures, including the applicable standard methods reference. This should include concentration of calibration gases where appropriate and expected emission concentrations. Method of calibration (through the system or to back of the monitor) should be indicated. Justify any proposed sampling or analytical modifications.
7. The number and length of sampling runs which will constitute a complete test.
8. Dimensioned sketch showing all sampling ports in relation to breeching and to upstream and downstream disturbances or obstructions of gas flow.
9. Estimated flue gas conditions such as temperature, moisture and velocity.
10. Projected process operating conditions during which the tests will be run (e.g., production rate). ***These conditions should match the operating conditions stated in***

the facility's permit or facility operations shall be at the maximum routine operating conditions during the test.

11. A description of any process or control equipment data to be collected during the test period. This should include any permit required information used to demonstrate the acceptable operations of emissions control processes and production rates.

12. A description of any monitoring data to be collected during the test period and subsequently reported (e.g., stationary continuous emission monitor data).

13. Chain of custody procedures.

14. Field quality assurance/quality control procedures (e.g., field blanks, sample storage and transport methods).

15. Laboratory quality assurance/quality control procedures utilized as part of the testing (e.g., manner and frequency of blanks, spikes and standards). This should include analysis of audit samples where required as a component of the approved test method.

16. Names and titles of personnel who will be performing the tests.

The facility information in items 1, 2, 3, 8, 10, 11 and 12 above can be submitted by completeing the attached Facility Test Information form or with a letter signed by the responsible official, as defined in Michigan Air Pollution Control Rule 336.1118(j). This letter shall certify that the testing will be conducted in accordance with the attached test plan and that the facility will be operated in compliance with permit conditions or at the maximum routine operating conditions for the facility. If the source operates under a Renewable Operating Permit, certification by a responsible official, using the Renewable Operating Permit Certification form (EQP 5736) must be included with the test plan and cover letter.

EMISSION TEST REPORTING

The emission test report should contain all pertinent data concerning the test program. In addition to reporting the results, it should include descriptions of the source, the sampling and analytical methodologies, the process operating conditions, and all raw field data, lab analytical data, and calculation methods. Since the report will serve as evidence to both the agency and the source as a demonstration of the compliance status of the facility, it is important it be complete in content and adequate in quality. Its contents should be presented in an understandable and organized manner. **The information listed below shall be submitted to the appropriate district office and the Technical Programs Unit** by the date specified in an applicable air use permit, consent order, consent judgment, or state or federal regulation. Otherwise, pursuant to Michigan Department of Environmental Quality Rule 1001(4), a complete test report shall be submitted to the AQD within 60 days following the last date of testing. In the event that the test report is not complete, additional information will be requested for submittal. If the information

is not received following two written requests to the facility, the test results may be rejected by the AQD.

While the exact format of the report and the applicable information necessary will vary depending on the source and the pollutants of interest, the following format should be utilized.

1. Introduction
   a. identification, location and dates of tests,
   b. purpose of testing,
   c. brief description of source,
   d. names, addresses and telephone numbers of the contacts for information regarding the test and the test report, and
   e. names and affiliation of all personnel involved in conducting the testing.

2. Summary of Results
   a. operating data (e.g., production rate, fuel type or composition),
   b. applicable permit/license number or designation for the source,
   c. results expressed in units consistent with the emission limitation applicable to the source, and
   d. comparison with emission regulations.

3. Source Description
   a. description of process, including operation of emission control equipment,
   b. process flow sheet or diagram (if applicable),
   c. type and quantity of raw and finished materials processed during the tests,
   d. maximum and normal rated capacity of the process, and
   e. description of process instrumentation monitored during the test.

4. Sampling and Analytical Procedures
   a. description of sampling train(s) and field procedures,
   b. description of recovery and analytical procedures,
   c. dimensioned sketch showing all sampling ports in relation to breeching and to upstream and downstream disturbances or obstructions of gas flow,
   d. sketch of cross-sectional view of stack indicating traverse point locations and exact stack dimensions.

5. Test Results and Discussion
   a. detailed tabulation of results including process operating conditions and flue gas conditions,
   b. discussion of significance of results relative to operating parameters and emission regulations,
   c. discussion of any variations from normal sampling procedures or operating conditions which could have affected the results,
   d. documentation of any process or control equipment upset condition which occurred during the testing,
   e. description of any major maintenance performed on the air pollution control device(s) during the 3 month period prior to testing,

f. in the event of a re-test, a description of any changes made to the process or air pollution control device(s) since the last test,
g. results of any quality assurance audit sample analyses required by the reference method,

h. calibration sheets for the dry gas meter, orifice meter, pitot tube, and any other equipment or analytical procedures which require calibration,
i. sample calculations of all the formulas used to calculate the results,
j. copies of all field data sheets, and
k. copies of all laboratory data including quality assurance/quality control (e.g. blanks, spikes, standards).

The facility information in items 1, 2 and 3 above can be submitted by completing the attached Facility Test Results form or in a letter signed by the responsible official, as defined in Michigan Air Pollution Control Rule 336.1118(j). This letter shall certify that the testing was conducted in accordance with the approved test plan and that the facility operating conditions were in compliance with permit requirements or were at the maximum routine operating conditions for the facility. If the source operates under a Renewable Operating Permit, certification by a responsible official using form, using the Renewable Operating Permit Certification form (EQP 5736), must be included with the emission test results and cover letter.

REFERENCES

1. Michigan Department of Environmental Quality Rules, Part 10, Intermittent Testing and Sampling.

2. United States Environmental Protection Agency, Plant Inspection Workshop-Techniques for Evaluating Performance of Air Pollution Control Equipment: Observing Compliance Tests, February, 1981.

Mailing Address for the Technical Programs Unit

Michigan Department of Environmental Quality
Air Quality Division
Technical Programs Unit
P.O. Box 30260
Lansing, MI 48909

Street Address for Technical Programs Unit (needed for Federal Express, UPS, etc.)

Michigan Department of Environmental Quality
Air Quality Division – Technical Programs Unit
Constitution Hall, 3rd Floor North
525 West Allegan Street
Lansing, MI 48909

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

Pre-Test Facility Information Form

Facility Name:
Facility Address: **County:**

Contact Person:
Telephone Number: **Fax Number:**

Permit Number: **SRN:**

Description of facility production (rates) or process (continuous or batch) operations:
Historical aveage production rate:
Historical maximum production rate:
Production rate to be maintained during emissions monitoring:

Air pollution control equipment and operation:

Maintenance activity on air pollution control equipment within last three months:

Production or process operations required during emissions testing:

Production or process control information to be recorded during emissions testing:

Air pollution equipment control equipment operating information to be recorded during emissions testing:

Representative from the facility must sign below certifying that the information provided on this form and any attached information is accurate and complete.

Signature: **Date:**
Name:
Title:
Facility:

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

Post Test Facility Information Form

Facility Name:
Facility Address: **County:**

Contact Person:
Telephone Number: **Fax Number:**

Permit Number: **SRN:**

Description of facility production rates or process operations during emissions sampling:

Are these items as described in test plan? If not provide an explanation for differences.

Air pollution control equipment and operations during emissions sampling:

Are these items as described in test plan? If not provide an explanation for differences.

Production or process control information recorded during emissions testing:

Air pollution equipment control equipment operating information recorded during emissions testing:

Based on the emission momitoring results is your facility in compliance with the applicable permit limitations?

Representative from the facility must sign below certifying that the information provided on this form and any attached information is accurate and complete.

Signature: **Date:**
Name:
Title:
Facility:

EXHIBIT D

UNITED STATES STEEL CORPORATION - GREAT LAKES WORKS

SUPPLEMENTAL ENVIRONMENTAL PROJECT DESCRIPTION

DETROIT RIVER SHORELINE RESTORATION

Project Title: Detroit River Shoreline Restoration Project, United States Steel Corporation, Detroit River

Problem Statement: Approximately 97% of the coastal wetlands and most of the natural shoreline in the Detroit River have been lost to development. Therefore, there is an urgent need to protect existing coastal wetlands and natural areas, rehabilitate degraded ones, and construct new areas, particularly in light of the new Detroit River International Wildlife Refuge. Areas of the Detroit River have been designated as an "ecologically significant area" by the *Conservation Vision for the Lower Detroit River Ecosystem* and this SEP would add approximately 2000 linear feet of natural shoreline to this total. Other projects of this type have been completed on the river and one is currently being developed, with a neighbor of Great Lakes Works. This will truly be significant because it will demonstrate native shoreline rehabilitation along the only International Heritage River System in North America (i.e., Detroit River) and in the only International Wildlife Refuge in North America.

Project Description: United States Steel Corporation, with assistance from Nativescape LLC and in partnership with the United State Fish & Wildlife Service will reconstruct approximately 2000 linear feet of shoreline at the Great Lakes Works using soft engineering techniques. The shoreline consists of fill material. Exotic plants species such as Phragmites and purple loosestrife had colonized this area in between the large (five feet plus) pieces of concrete and slag riprap that is the existing shoreline.

Nativescape, LLC, will design the new, native shoreline using an *Aquatic Shelf* and other soft engineering techniques. This cutting-edge technology utilizes the latest soil bioengineering BMPs or Best Management Practices in shoreline restoration and native ecosystem research. The outer edge of the aquatic shelf is created out of geotextile fabric tube (Soil Sock). This is pneumatically filled with clean recycled yard compost; small pea stone and native seed. This soil sock is a continuous one-piece tube two feet in diameter; the weight of the completed soil sock will anchored to the substrate.

The area is then pneumatically backfilled with compost to the existing shoreline, which will provide a planting bed for native emergent wetland plants. Aquatic plants will then be installed by volunteers into this area, and native wetland seed will be applied. This soft armoring will hold the soil in place until the native plant root systems are established. The *Aquatic Shelf* will provide a planting bed to reestablish the emergent wetland vegetation more quickly. This is built on top of the existing riprap debris, which

would be very costly to remove. Exotic invasive species will be eradicated using several techniques (e.g., Phragmites cutting and a biodegradable herbicide).

When the native plants root systems are established, the entire structure will be anchored to the existing bottom and shoreline. This will jump-start the land building process. As waves break on the soil sock they will drop their sediment load and create more soil, which the plants will grow into. As this process continues, plant material and sediment will slowly build up and a coastal marsh ecosystem will once again be established. These provide habitat for many forms of wildlife as fish nurseries, bird nesting, food and cover, and it will improve water quality by filtering and absorbing impurities.

Project Results (Benefits): The project will produce measurable results, including linear feet of rehabilitated, native shoreline, square feet of littoral area rehabilitated; estimated amount of invasive species removed or killed, number of native aquatic tracheophytes planted, and possibly environmental education of students and volunteers involved.

Project Costs:

This is only an estimated budget breakdown for the Shoreline Restoration Project.

Item	Cost Percentage
Project development, planning, design, supervision, management, permits	24%
Construction Phase	72%
Monitoring, final reporting	4%
TOTAL PROJECT COST	$200,000

Project Schedule:

This is just an estimated schedule for the Shoreline Restoration Project and could be impacted by the duration of permitting activity and weather.

Item	Month
Project development, planning, design, supervision, management, permits	Jan. – Apr. 2005
Construction Phase	May – Aug. 2005
	Sept. 2005 – Dec.
Monitoring, final reporting	2006
TOTAL PROJECT TIME	Two Years

Contact Persons: Chris Lehr, Restoration Biologist with Nativescape LLC www.nativescape.net, 517-456-9696, chrisl@nativescape.net; Dr. John Hartig, Detroit International Wildlife Refuge Manager, U.S. Fish & Wildlife Service 734-692-7608, john_hartig@fws.gov.